

## CLAIMS

1. A vapor-grown-carbon-fiber-containing dispersion containing vapor grown carbon fiber having a fiber diameter  
5 of 0.001 to 5  $\mu\text{m}$  and an aspect ratio of 5 to 15,000, a resin soluble in an organic solvent and an organic solvent, wherein lumps of the carbon fiber are partially disintegrated to thereby allow separated individual filaments of the carbon fiber to be present as dispersed.

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2. A vapor-grown-carbon-fiber-containing dispersion containing vapor grown carbon fiber having a fiber diameter of 0.001 to 5  $\mu\text{m}$  and an aspect ratio of 5 to 15,000, a resin soluble in an organic solvent and an organic solvent, wherein  
15 the carbon fiber is present such that carbon fiber lumps having a diameter of 40  $\mu\text{m}$  or less and separated individual carbon fiber filaments are intermingled.

3. The vapor-grown-carbon-fiber-containing dispersion  
20 as claimed in claim 1 or 2, wherein the vapor grown carbon fiber contains 0.001 to 5 mass% of boron.

4. The vapor-grown-carbon-fiber-containing dispersion as claimed in claim 1 or 2, wherein the resin soluble in an  
25 organic solvent is a resin comprising a polymer having a structural repeating unit which at least partially contains a cyclic structure.

5. The vapor-grown-carbon-fiber-containing dispersion as claimed in claim 1 or 2, wherein the resin soluble in an organic solvent is any of polystyrene, polycarbonate, polyarylate, polysulfone, polyether-imide, polyethylene terephthalate, polyphenylene oxide, polyphenylene sulfide, polybutylene terephthalate, polyimide, polyamidoimide, polyether-ether-ketone, or polyamic acid, or a mixture thereof.

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6. The vapor-grown-carbon-fiber-containing dispersion as claimed in claim 1 or 2, wherein the organic solvent has an ET value of 45 or less, where the ET value is a solvent parameter calculated from the absorption spectrum of pyridinium-N-phenol betaine.

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7. The vapor-grown-carbon-fiber-containing dispersion as claimed in claim 1 or 2, wherein the organic solvent has an ET value of 45 or less and has a structure which is partially cyclic, where the ET value is a solvent parameter calculated from the absorption spectrum of pyridinium-N-phenol betaine.

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8. The vapor-grown-carbon-fiber-containing dispersion as claimed in claim 6, wherein the organic solvent is any of tetrahydrofuran (THF), N-methylpyrrolidone, benzene, toluene, cyclohexane,  $\gamma$ -butyrolactone, butyl cellosolve, or a mixture

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thereof.

9. The vapor-grown-carbon-fiber-containing dispersion as claimed in claim 1, wherein the ratio (by mass) of vapor grown carbon fiber to resin soluble in organic solvent is "carbon fiber" : "resin soluble in organic solvent" = 0.1 to 80 : 20 to 99.9, and the resin content in the dispersion is 0.1 to 60 mass%.

10 10. A method for preparing a dispersion containing vapor grown carbon fiber, comprising a step of dissolving a resin in an organic solvent, adding thereto vapor grown carbon fiber having a fiber diameter of 0.001 to 5  $\mu\text{m}$  and an aspect ratio of 5 to 15,000, and subjecting the resultant mixture to stirring and/or ultrasonication.

11. A method for preparing a dispersion containing vapor grown carbon fiber, comprising a step of mixing a resin soluble in an organic solvent and vapor grown fine carbon fiber having a fiber diameter of 0.001 to 5  $\mu\text{m}$  and an aspect ratio of 5 to 15,000, and adding the resultant mixture to an organic solvent.

12. A method for producing a resin composite material containing vapor grown carbon fiber, characterized by applying a vapor grown carbon fiber dispersion as claimed in any of claims 1 to 9 to a substrate material, followed by

removal of the solvent.

13. A resin composite material containing vapor grown carbon fiber, produced by the method as claimed in claim 12.

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14. An electroconductive material including a resin composite material obtained by the method as claimed in claim 12.

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15. A thermal conductive material including a resin composite material obtained by the method as claimed in claim 12.